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LISTING OF SPECIFICATION AMENDMENTS:

Please replace paragraph [0004] with the following amended paragraph:

[0004] It is therefore desirable to provide a service whereby call credits can be purchased through the Internet and integrated into an electronic ~~personalized gift~~-certificate that may be sent to a recipient via email as a personalized gift certificate. It is also desirable to provide a system that permits the initiation of a telephone call to be charged to the credits in a very simple, convenient manner.

Please replace paragraph [0007] with the following amended paragraph:

[0007] The invention also provides a method that enables a call to be charged to the electronic call credits and to be initiated directly from an electronic ~~call credit~~-certificate that is emailed to the recipient.

Please replace paragraph [0016] with the following amended paragraph:

[0016] The invention therefore provides a simple, fast and convenient way for customers to purchase call credits for designated recipients. The customer may configure the electronic certificate as desired using a plurality of options and may designate the calling party number and optionally the called party number when purchasing a ~~call credit~~-an electronic certificate. The method of using the call credits to initiate a call is convenient and secure. The unique identifier of the electronic certificate for the call credits is verified before forwarding a call request message to the call control node. To minimize the possibility of fraud, the encrypted unique identifier that is transmitted from the ~~call electronic~~ certificate to the application server is not revealed to the customer or the recipient. Consequently, only persons having access to the recipients email account can activate a call request using an electronic certificate sent to the recipient.

Please replace paragraph [0021] with the following amended paragraph:

[0021] FIG. 4 is a schematic view of a screen display showing an exemplary ~~gift~~ electronic certificate created using the apparatus in accordance with the invention;

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Please replace paragraph [0023] with the following amended paragraph:

[0023] FIG. 6 is a flow diagram illustrating a procedure followed by a recipient of a call credit an electronic certificate when requesting a telephone call to be charged to the electronic certificate;

Please replace paragraph [0029] with the following amended paragraph:

[0029] The application server 22 further has access to a memory for storing a database and programmed instructions for storing a copy of each electronic certificate in a database and sending the electronic certificate to the recipient via email. The application server 22 is preferably enabled to encrypt and decrypt messages sent and received. It is also enabled to calculate costs of call sessions and deduct a charge for a call made using an electronic certificate. When a call is made, the application server deducts a charge for the call from a stored remaining value of call credits associated with the electronic certificate. The application server 22 is also preferably provided access to a database of designs which may be displayed to the customer to permit the customer to use a point and click interface to create a message or a greeting card to accompany the electronic certificate.

Please replace paragraph [0033] with the following amended paragraph:

[0033] The Internet 26 supports the World Wide Web which enables electronic commerce in a manner known in the art. A user of the PC 30 may access the World Wide Web through a dial-up or dedicated connection to an Internet Service Provider (ISP). The user may use the PC 30 to access a Web page of application server 22 which is configured to vend electronic call credits in a variety of formats and options, as will be described below in more detail. If the user elects to purchase an electronic call certificate, the user becomes a customer. The customer designates a recipient of the electronic certificate. The recipient may be the customer or any other person having an email address. After a purchase is confirmed, the application server 22 issues an electronic certificate for the purchased value of the call credits. Each electronic certificate is associated with a unique identifier. The electronic certificate is sent via email to the recipient's email address and a copy of the electronic certificate information is stored in the database of the application server 22.

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Please replace paragraph [0034] with the following amended paragraph:

[0034] When the recipient logs on to their email account and opens the message that includes an electronic certificate, the recipient may use the electronic certificate to request a telephone call by activating a call icon in the electronic certificate. The electronic certificate is preferably associated with the email message as an attachment and it can consequently be dragged and dropped onto the desktop, for example, for easy accessibility. Clicking on the call icon will initiate a call by displaying a call request form. The format of the call request form depends on several factors, as will be explained below in more detail. For example, the customer has an option to specify the called number for an electronic certificate. If the electronic certificate is a "Call Me" electronic certificate, the customer predetermines the called number and it cannot be modified by the recipient.

Please replace the heading before paragraph [0036] with the amended heading:

~~Certificate Purchase~~Electronic Certificate Purchase

Please replace paragraph [0040] with the following amended paragraph:

[0040] FIG. 4 illustrates an example of a customer interface 68 used to create a customer occasion card. In the example shown, the customer has created a card in which an electronic copy of an electronic certificate 68-74 is incorporated into a birthday card. The customer interface 68 includes section 70 where the customer is permitted to input a personalized greeting message to the recipient. In an area 69 above the message, the customer is enabled to select from a palette of graphic images and text fonts to create a personalized occasion card. Alternatively, the customer may select a favourite from a library of pre-constructed designs for different types of cards. Preferably, a small information window 72 provides the recipient with instructions for using the electronic certificate 74. The electronic certificate 74 displayed at the bottom of the card shows the type of electronic certificate, a purchased value of the call credits and preferably also indicates when the electronic certificate can be used. A call icon 76 located on a button of the electronic certificate 74 permits the recipient to initiate a call request with a mouse click.

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Please replace paragraph [0043] with the following amended paragraph:

[0043] The customer uses the message format menu to select a format for a message to accompany the electronic certificate. The message format menu offers selections such as: no message; occasion card; thank you note; etc. The customer also selects a call mode from the call mode menu 64. The call mode menu may include selections for "Call Me", "Call a Particular Person" or "Call Anyone", as described above. The customer is requested to input their telephone number if the "Call Me" option is selected. The customer must also input a telephone number if the "Call a Particular Person" option is selected. This option may permit the input of two or more telephone numbers to permit any one of service several persons to be phoned. Those inputs are accomplished in step 90. In step 92, the customer inputs the recipient's cmail address in section 66 (FIG. 3), to which the ~~call credit~~ electronic certificate will be sent via email. The message format 64 (FIG. 3) is examined in step 94 to determine whether a personalized message is required to appear on the electronic certificate. If the message format does not require a personal message, a copy of the electronic certificate is displayed to the customer in step 98 (FIG. 5B). Otherwise, the personalized message is input in step 96 and a copy of the electronic certificate is displayed to the customer in step 98. The personalized message appears in the copy of the electronic certificate (see FIG. 4).

Please replace paragraph [0044] with the following amended paragraph:

[0044] After the completed electronic certificate 74 is displayed, the customer must confirm the purchase in step 100. If a purchase is not confirmed, the screen display is returned to the option menu (step 88) to permit the customer to change the purchase order. If the purchase is confirmed in step 100, the customer must input payment information, which includes selecting one of a credit card, debit card and calling card, and inputting a card number and card expiration date, for example. On receipt of the payment information, the application server 22 (FIG. 1) sends a query message to the issuing credit authority for approval for the purchase, in a manner well known in the art. If the payment is not approved step 104, the customer must indicate in step 110 whether to cancel the transaction or return to step 102 to re-input payment information. If the payment is approved, the customer is issued a receipt (step 106) and the transaction is completed (108). The receipt may be stored in the customer's PC 30 or printed to serve as evidence of the purchase. In step 108, completion of the transaction involves several steps in which the customer is not involved. For example, a copy of information defining the electronic

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certificate is stored in a database. The database may be associated with the application server 22 (FIG. 1) or with the separate certificate redemption server (not shown). Thereafter, the electronic certificate is emailed to the recipient address and the date and time of mailing is recorded in the database. If the electronic certificate is returned because the email address is invalid, the purchase price is credited to the customer's account and a notice is sent to the customer by email if customer contact information is available.

Please replace the heading before paragraph [0045] with the amended heading:

Certificate Redemption**Electronic Certificate Redemption**

Please replace paragraph [0045] with the following amended paragraph:

[0045] FIG. 6 illustrates the steps involved in the redemption of a ~~call credit~~ an electronic certificate 74 by requesting a call completion. The recipient opens their email box from the PC 36 (step 162) and opens an email containing the electronic certificate 74 (FIG. 4) as any other email message is opened. The personalized greeting message, if any, and information for using the electronic certificate 74 is displayed. The specified call mode selected by the customer is also displayed. To request a call, the recipient (step 164) clicks on the icon 76 to activate it. When activated, the icon displays an appropriate call initiation input form which may require the recipient to input their telephone number as well as a called party number, if the call mode is "Call Anyone". The recipient is not requested to input a called party number if the call mode is "Call Me". If the call mode is "Call a Particular Person", the recipient may be required to select a number from a list entered by the customer. After the call initiation input form is completed, it is sent to the application server 22.

Please replace paragraph [0046] with the following amended paragraph:

[0046] In step 166, the application server 22 may analyze the information and displays a maximum call time message on the screen of PC 36. The maximum call time message may include a call history, if any previous calls were made using the electronic certificate, and a maximum call duration available in accordance with a value of call credits that remain in the electronic certificate giving the calling and called numbers. The recipient must then confirm the call request in step 168. The recipient can terminate the call request, as indicated in step 170, if the maximum call duration available is too short, or for some other reason. However, the

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application server 22 may also terminate the call request because the maximum call duration available is less than a reasonable duration threshold for the call. Regardless of the cause of termination, the recipient is able to restart the procedure to place a call to another party if the call mode is "Call Anyone" or "Call a Particular Person" and more than one called number is specified. For example, the recipient may abandon a call to Japan and try again to use the electronic certificate to call someone in North America, for example. If the call request is confirmed, the recipient will receive a Disconnect message, in step 172, on the screen of the PC 36. The Disconnect message advises the recipient to Disconnect the PC 36 from the telephone line to free the telephone line for telephone 34, if the PC 36 shares the telephone line with the telephone 34, or simply to ensure that the telephone 34 is ready for incoming calls. The recipient answers the telephone in step 176 when the telephone 34 rings in step 174 and goes on-hook in step 78 to complete the call, as indicated in step 179 if the call is completed before the call credits are exhausted. However, if the call duration exceeds a time threshold determined by the remaining call credits (step ~~178~~ 177), as computed by the CCN 24, the CCN 24 will terminate the call by sending Release messages in each direction through the signaling network to cause the call facilities to be released in step 180.

Please replace paragraph [0047] with the following amended paragraph:

[0047] FIG. 7 illustrates the steps of a procedure performed by the application server 22 in response to the recipient's call request initiating the telephone call charged to a ~~call credit~~an electronic certificate. As noted above, the ~~call credit~~electronic certificate redemption procedure may be performed by the application server 22 or by a ~~call credit~~certificate redemption server (not illustrated). In this example, the procedure is performed by the application server 22. The application server 22, in step 182, receives the call request from the ~~call credit~~electronic certificate recipient. The call request includes the information respecting the calling and called party numbers and the unique identifier, as described above. The unique identifier is encrypted and associated on issuance with the ~~call credit~~electronic certificate by the application server 22, as explained above. The unique identifier is not displayed to the recipient, but is inserted in the call request by program code such as a Java script when the icon is activated.

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Please replace paragraph [0048] with the following amended paragraph:

[0048] On receipt of a call request—message, the application server 22, in step 184, verifies the call request by accessing the electronic certificate information stored in the database using the unique identifier inserted in the call request message—and, in step 186, calculates a maximum call duration using the calling and called party numbers and a call rate database. The result of the call duration calculation is preferably displayed on the recipient's PC 36 along with a previous call history, as indicated in step 188. On receipt of the call duration message, the recipient confirms the call request in step 190. If the computed call duration is less than a minimum threshold, the application server 22 may deny the call request and the call is cancelled in step 206. The application server 22 displays the Disconnect message to the recipient, as indicated in step 192, and sends a message through the Internet 26 to the CCN 24 to instruct the CCN 24 to initiate actions in the PSTN to connect the recipient's telephone to the called party telephone, as indicated in step 194, if the call request is confirmed by the recipient and the computed call duration exceeds the threshold. The message sent to CCN 24 includes telephone numbers of the calling and called parties, maximum call duration and the unique identifier to permit the CCN 24 to return an actual call duration report.

Please replace paragraph [0049] with the following amended paragraph:

[0049] The actual call duration report from the CCN is received at the application server 22, in step 196, after the telephone communication between the calling and called parties is completed or terminated by the CCN 24, if the maximum call duration is exceeded. The application server 22 uses the unique identifier associated with the report to retrieve the electronic certificate information from the database, in step 198 and calculates, in step 200, the actual call cost using the certificate information. The message to the CCN 24 and the report to the application server 22 are respectively encrypted. The cost of the call is deducted from the remaining value of the electronic certificate and the resultant value of the call credits is stored in the database as updated electronic certificate information in steps 202 and 204.

Please replace paragraph [0050] with the following amended paragraph:

[0050] The CCN 24 performs the signaling required to connect the ~~call—electronic~~ certificate recipient to a called party. The CCN 24 is a physical node in the common channel

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signaling network (SS7) of a public switched telephone network (PSTN). To further illustrate the procedure of setting up and controlling a telephone call between the recipient and a called party initiated by a call request message sent to the application server 22, two examples are described below.

Please replace the heading before paragraph [0051] with the amended heading:

Network Control During Certificate Redemption

Please replace paragraph [0051] with the following amended paragraph:

[0051] FIG. 8 illustrates a call flow diagram in which the calling party is the recipient of ~~a call credit~~ an electronic certificate and the called party is, for example, the customer who purchased a "Call Me" electronic certificate. The customer's telephone 28 and the PC 30 are connected to the SSP 32 by a subscriber line 228 (FIG. 1). In order to enable the invention to be practiced, selected SSPs in the network are equipped with EISUP trunks which are designated for handling selected calls. The EISUP trunks 218 are preferably ISUP trunk groups carried on DS1 or E1 facilities that respectively accommodate 24 or 30 voice channels. EISUP trunks are differentiated from other ISUP trunks in the network in that the CCN 24 is a virtual switching node associated with each EISUP trunk group. To other switching points in the network, the CCN 24 appears to be a physical switching node in a middle of each EISUP trunk group. Each voice channel is referred to as a trunk member.

Please replace paragraph [0052] with the following amended paragraph:

[0052] The CCN 24 is connected to the common channel signaling network, for example, by a signal transfer point (STP) pair 220 using SS7 A-links 222. The STP pair 220 is connected to SSPs 32 and 38 using ~~SS7~~ A-links 224. Since the CCN 24 serves as a virtual switching node in a call path routed over an EISUP trunk, it is enabled to assume control of a call by treating connections in the call path as controllable connections which may be released or reconnected as required using ISUP signaling messages which it generates, manipulates or modifies, as required.

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Please replace paragraph [0053] with the following amended paragraph:

[0053] As shown in FIG. 8, a call control messaging sequence is initiated when the CCN 24 receives a call request message from the application server 22 in a PSTN in which the call is routed over interswitch EISUP trunks. Interswitch EISUP trunks are described in detail in Applicant's patent referred to above. When the CCN 24 receives a call request message from the application server 22, the CCN 24 extracts the calling (recipient) and called party numbers from the message and first uses the calling party number to formulate an Initial Address Message (IAM) to initiate a call to the called party. The CCN 24 sends the IAM message 250 via SS7 A-links 222 to the STP pair 220. The STP pair 220 forwards the IAM message 252 to the SSP 38. On receipt of the IAM, the SSP 38 verifies that the subscriber line 230 is idle and sets rings 254 on the subscriber line 230 to the telephone 34.

Please replace paragraph [0054] with the following amended paragraph:

[0054] Meanwhile, the SSP 38 formulates an Address Complete (ACM) message 256 and sends it via the SS7 A-link 224 to the STP pair 220. The STP pair 220 in turn forwards the ACM message 258 via the SS7 A-links 222 to the CCN 24. When an off-hook signal 260 is detected on subscriber line 230, the SSP 38 formulates an Answer (ANM) message 264 and sends it to the CCN 24 through the SS7 A-links 224 and 222 via the STP pair 220 (message 262). On receipt of the ANM message (264), the CCN 24 has confirmation message 264 that the recipient is on the line. The CCN 24 therefore formulates a second IAM message 266 containing the called party number and sends it via the SS7 A-link 222 to the STP pair 220 that in turn passes the IAM message 268 via the SS7 A-link 224 to the SSP 32 which serves the subscriber line 228 of the called party. The SSP 32 responds to the IAM 268 by verifying that the subscriber line 230 is idle and applies rings 270 to the line. The first and second IAMs are interrelated to an extent that circuit identification codes (CICs) in each message identify opposite ends of the same trunk member in EISUP 21A-218 (FIG. 1). The SSP 32 then formulates an ACM message 272 and sends it to the CCN 24 through the SS7 A-links 224 and 222 via the STP pair 220.

Please replace paragraph [0056] with the following amended paragraph:

[0056] If the call is not terminated by the CCN 24 because the maximum call duration is exceeded, the CCN 24 detects call termination when the SSP 38 formulates a Release (REL)

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message 282 and sends this message through the SS7 A-links 224 and 222 to the CCN 24 via the STP pair 220 284 in response to the calling party going on-hook 286. Upon receipt of the REL message 282 from the SSP 38, the CCN 24 formulates an RLC message 288 and sends it (message 290) via STP pair 220 to the SSP 38. Meanwhile, the CCN 24 also formulates an REL message 292 and sends it via the STP pair 220 to the SSP 32. The SSP 32 in turn applies dial tone 294 to the subscriber line 228 and formulates an RLC message 296 and sends it over the SS7 A-links 224, 222 to the CCN 24 via the STP pair 220. The call connection is thus terminated. On call termination, the CCN sends a call duration report to the application server 22 via the Internet 26 to permit the application server to update the ~~call credit~~electronic certificate record, as explained above.

Please replace paragraph [0057] with the following amended paragraph:

[0057] FIG. 9 illustrates the principal call control messages exchanged when a call is completed using loop-back EISUP trunks 234. The CCN 24 sends the IAM message 300 through the SS7 A-links 222, 224 via (302) the STP pair 220 to the SSP 38. Because loop-back trunks 234 are used at the SSP 38, the IAM message 300 is directed to an end of the loop-back group trunk 234 provisioned for inbound calls. On receipt of the IAM, the SSP 38 treats the call as any other inbound call and applies ringing signals 304 to the subscriber line 230, which causes the telephone 34 to ring. The SSP 38 then formulates an ACM message 306 and forwards the message over (308) the SS7 A-links 224, 222 via the STP pair 220 to the CCN 24. The SSP 38 also formulates an ANM message when the ~~call electronic~~ certificate recipient answers the telephone 34, and forwards the ANM message 310 to the CCN 24 via (312) the STP pair 220.

Please replace paragraph [0058] with the following amended paragraph:

[0058] After CCN 24 receives the ANM message 310, the CCN 24 formulates another IAM message 314, in which the called number is the called party's number. The second IAM contains a CTC which points to an outbound end of the same trunk member of the loop-back trunk group 234 referenced in the first IAM 300. On receipt of the IAM, the SSP 38 consults its routing tables to determine where the IAM should be routed. The translation tables point to the SSP 32, so the IAM message 316 is forwarded to the SSP 32. On receipt of the IAM 316, the SP 32 checks the availability of the called party line and applies ringing signals 318 to the line 228. The SSP 32 then formulates an ACM message 320 and sends the ACM back to the SSP 38. The

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SSP 38 in turn relays the ACM message 322, 324 to the CCN 24. At this point in the call setup process, the telephones 34 and 28 are connected by an available member of the ISUP trunk groups 212 and the EISUP loop-back trunks 234 and the recipient hears the ringing signals 326 applied to the telephone 28. The SSP 32 generates an ANM message 330 when an off-hook signal 328 is detected on the subscriber line 228. The SSP 38 sends the ANM message to the STP pair 220. The STP pair 220 forwards the ANM message 332 through to the CCN 24. Call setup is thus completed and the conversation 330 begins.

Please replace paragraph [0059] with the following amended paragraph:

[0059] If the call is not terminated by the CCN 24 because the maximum call duration has been exceeded, the call will terminate normally when one of the parties places their telephone on-hook. In this example, the SSP 38 detects an on-hook signal 338 and generates an REL message 340 when the recipient hangs up the telephone 34 and sends REL message 342 to the CCN 24. The CCN 24 receives the REL message 342 and stops a timer associated with the call. The CCN 24 then formulates an RLC message 344 and sends the RLC message 344 to the SSP 38 via the RLC message 346 to the STP pair 220. Subsequently, the CCN 24 formulates another REL message 348, 350 and sends that message to the SSP 32 which releases the outbound end of the loop-back trunk member of trunk group 234, and forwards the REL message 348 to the SSP 38. The SSP 38 subsequently generates an RLC message 356 to the SSP 32. On receipt of the REL message 356, the SSP 32 releases facilities seized to handle the call and sets a dial tone 358 on the subscriber line 228. The SSP 32 forwards the RLC message 360 to the STP pair 220 and the STP sends message 362 to the SSP 38. Call processing is thus completed and the CCN 24 formulates a data message to report the duration of the call to the application server 22. The CCN 24 sends the data message to the application server 22 over the Internet. The application server 22 uses the unique identifier included in the message to retrieve the call electronic certificate record. The application server 22 computes a charge for the call using the call duration and deducts the charge from the call credits. The application 22 then updates a call record by including particulars of the call just completed and saves the updated call electronic certificate to the database.

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